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# EUROPEAN PATENT APPLICATION

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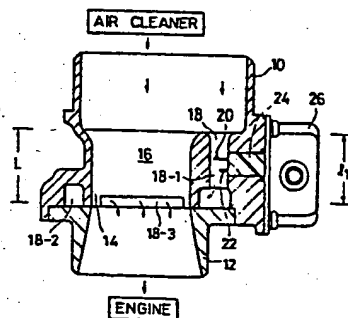
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54 A method for measuring air flow and an air flow meter for internal-combustion engine.

57 The air flowing in through an air cleaner is passed through a main passage and sucked into an internal-combustion engine. A part of the air flowing through the main passage (16) flows in a by-pass passage (18). An air flow sensor (20) is provided in the by-pass passage. In this case, the length (l) of the bypass passage is substantially three or more times longer than that of a part (L) of the main passage corresponding thereto. Accordingly, even when the internal-combustion engine is operated with a throttle nearly totally open and the air in the main passage is pulsed, the average flow rate in the by-pass passage increases owing to the inertial lag effect obtained by lengthening the by-pass passage, so that it is possible to prevent the output of the flow sensor from undesirably lowering.

FIG. 11



## Title of the Invention

A. METHOD FOR MEASURING AIR FLOW AND AN AIR FLOW METER  
FOR INTERNAL-COMBUSTION ENGINE

## Background of the Invention

## 5 Field of the Invention:

The present invention relates to an air flow meter and a method for measuring the flow rate of intake air supplied to an internal-combustion engine of an automobile or the like.

## 10 Description of the Prior Art:

There are a variety of known methods for measuring the flow rate of intake air supplied to an internal-combustion engine. Among them, heat-sensitive air flow meters, such as hot-wire  
15 air flow meters, are widely employed, since they are generally excellent in responsiveness and capable of measuring the mass flow rate. Such heat-sensitive air flow meters have been made well known by U.S.P. Nos. 3,747,577, 3,750,632 and  
20 3,829,966. These known heat-sensitive air flow meters are arranged such that as a flow rate sensing part a platinum wire with a diameter of from 70  $\mu$ m to 100  $\mu$ m is stretched inside an intake pipe. This arrangement, however, is insecure in  
25 durability and easily mechanically damaged by a

FIG. 3

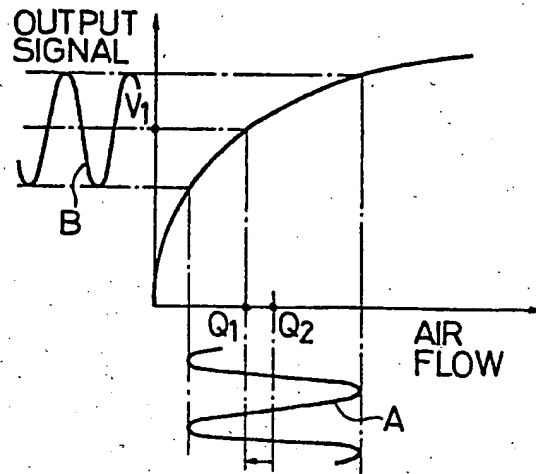


FIG. 4

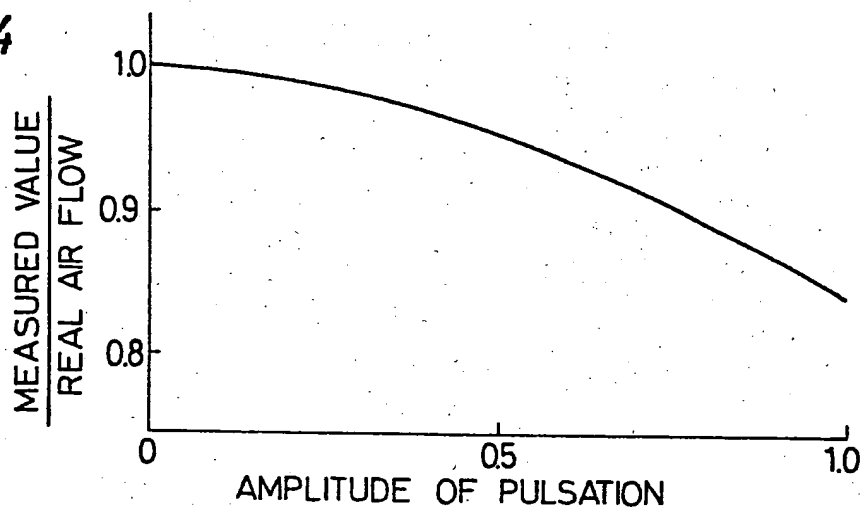


FIG. 5

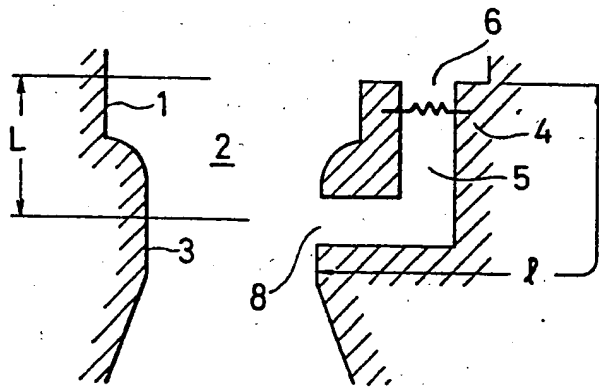


FIG. 10

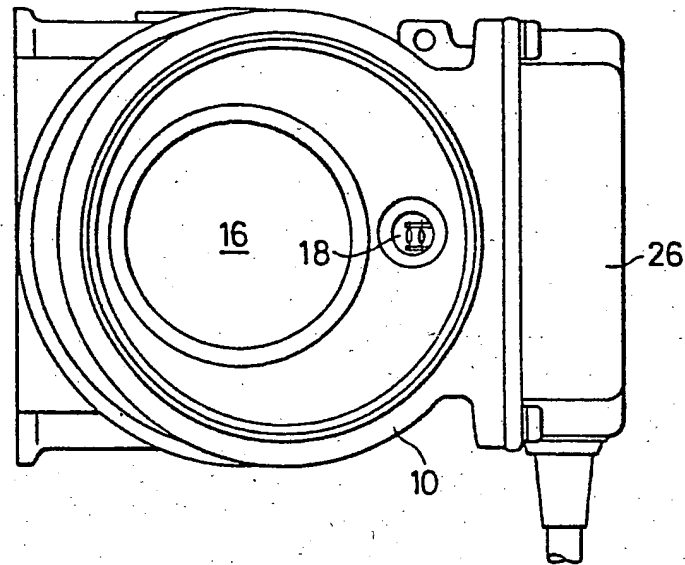


FIG. 11

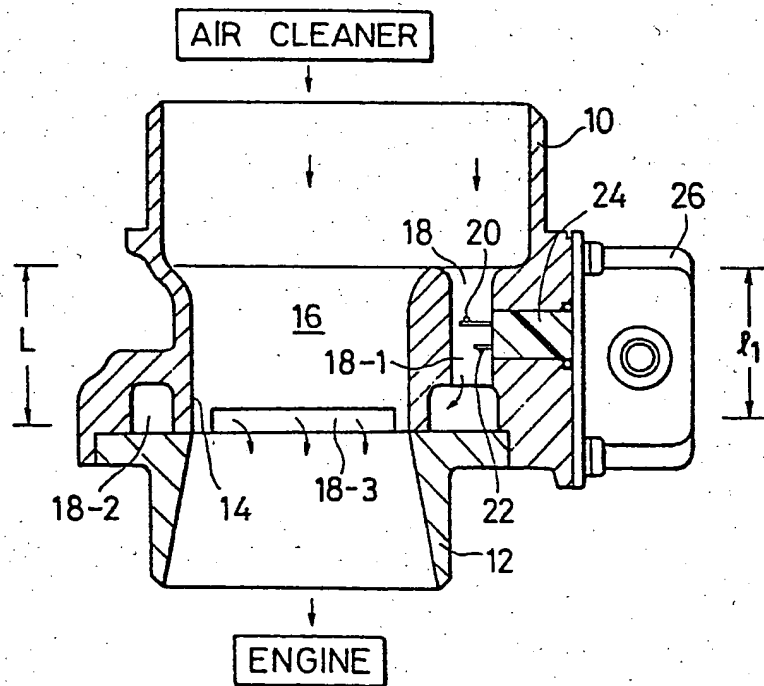


FIG. 12

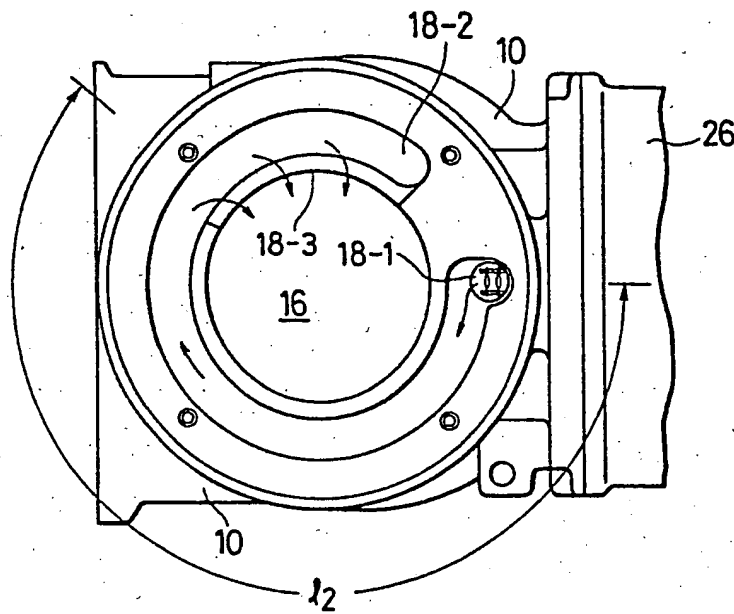


FIG. 13

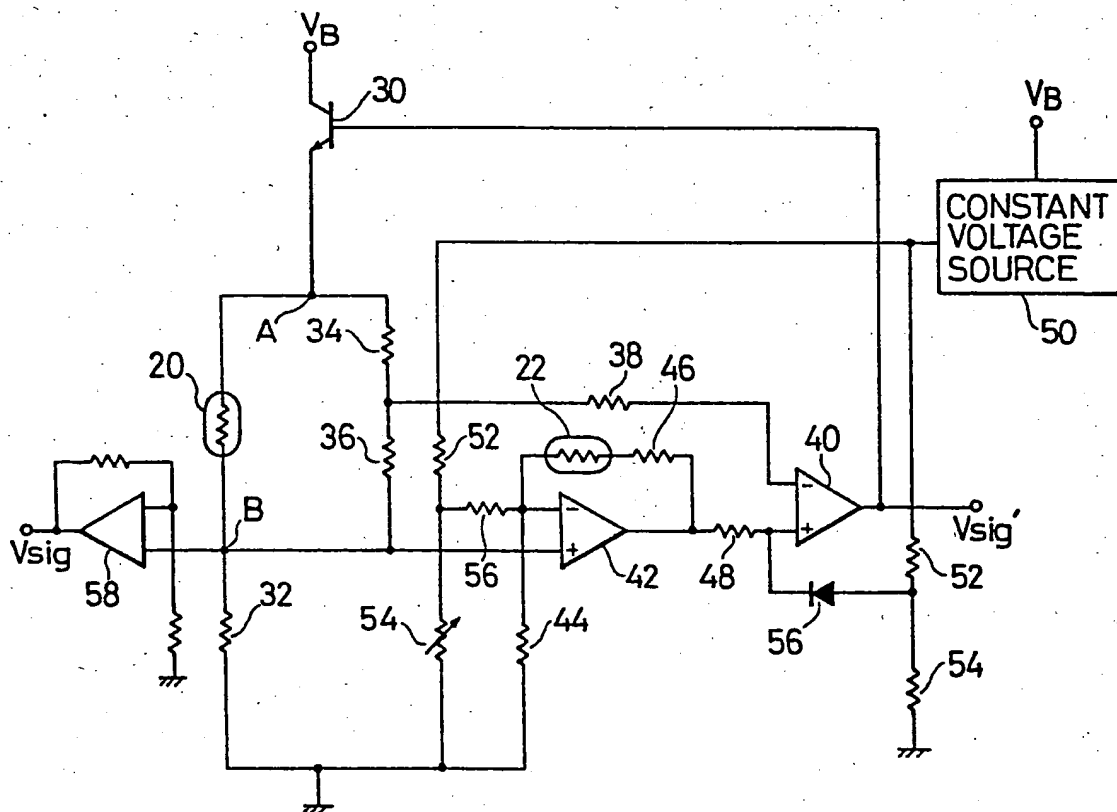


FIG. 14

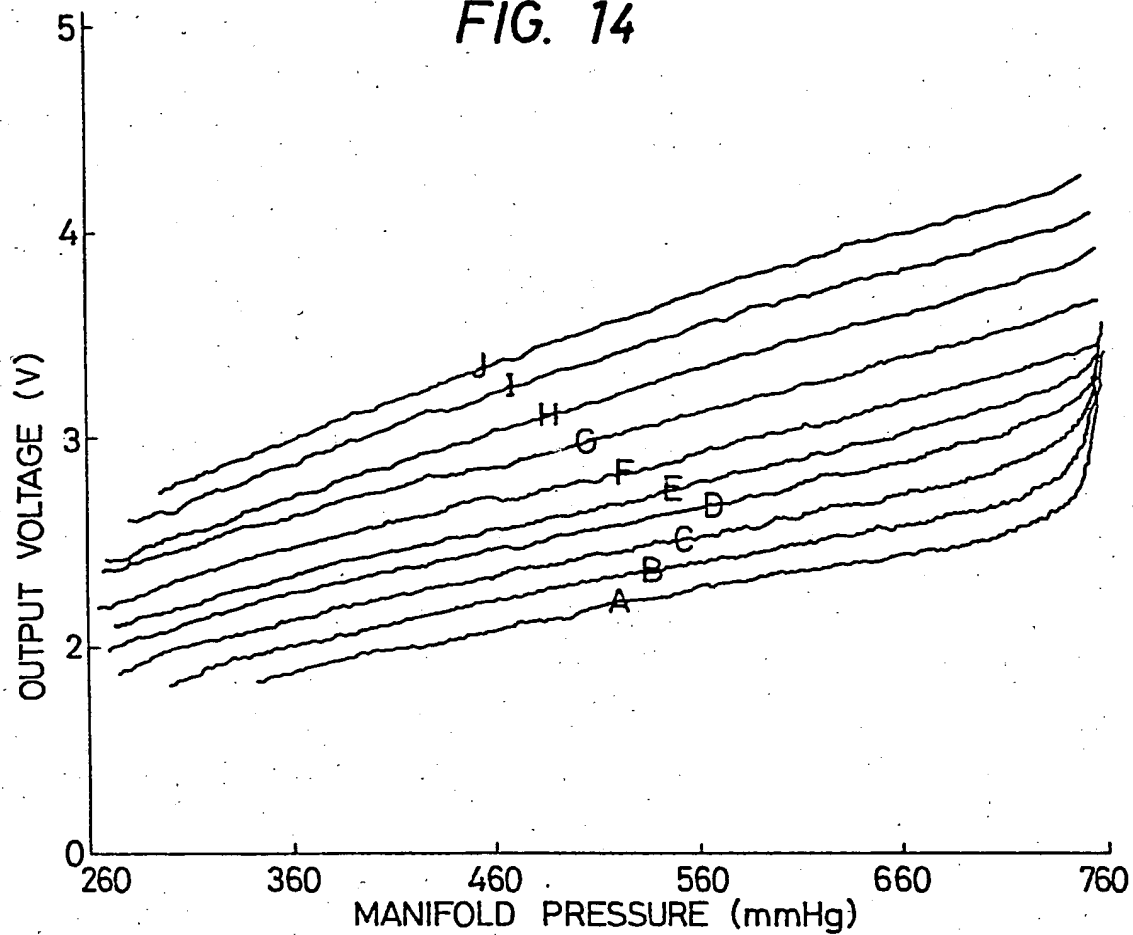


FIG. 15

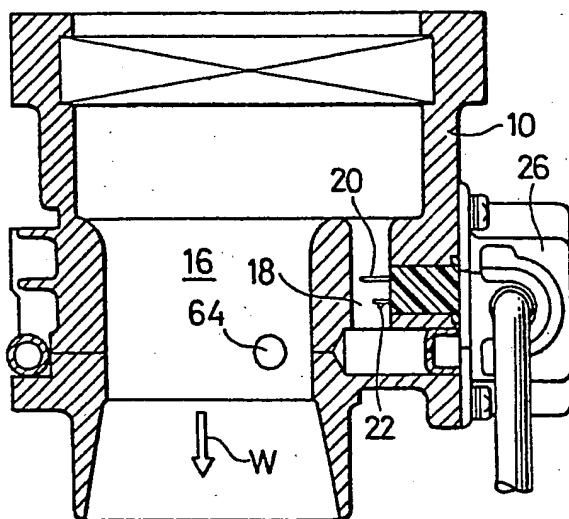


FIG. 16

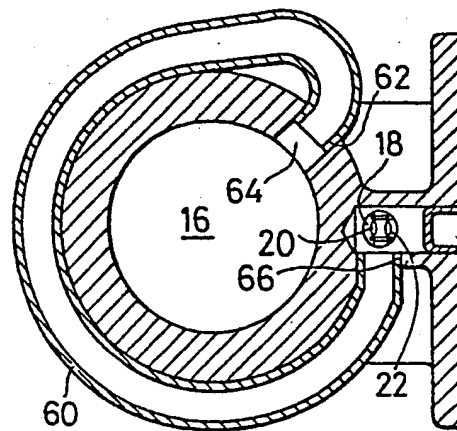


FIG. 17

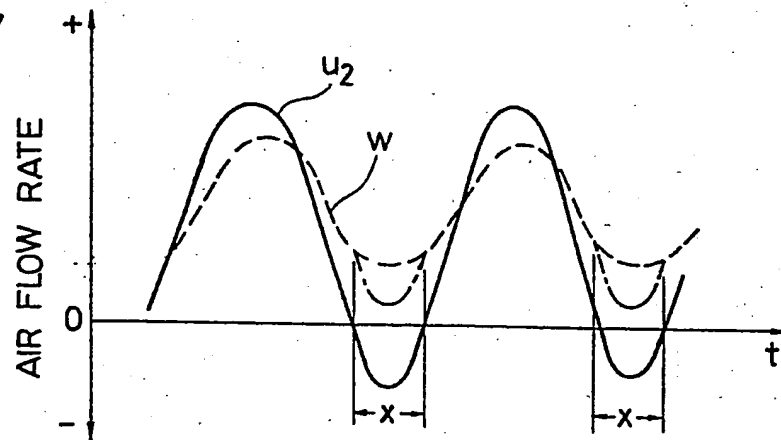


FIG. 18

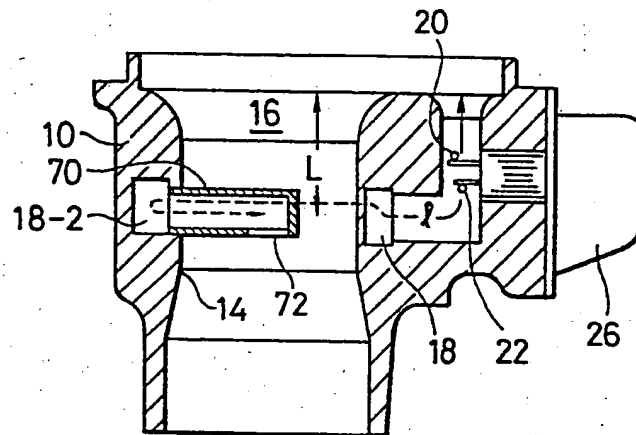


FIG. 19

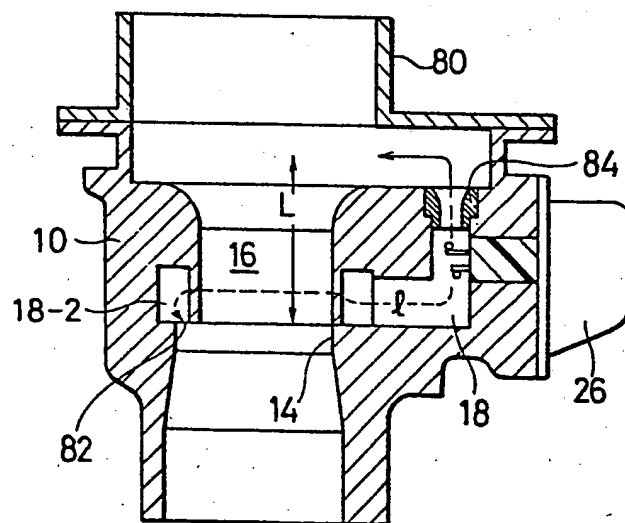


FIG. 20

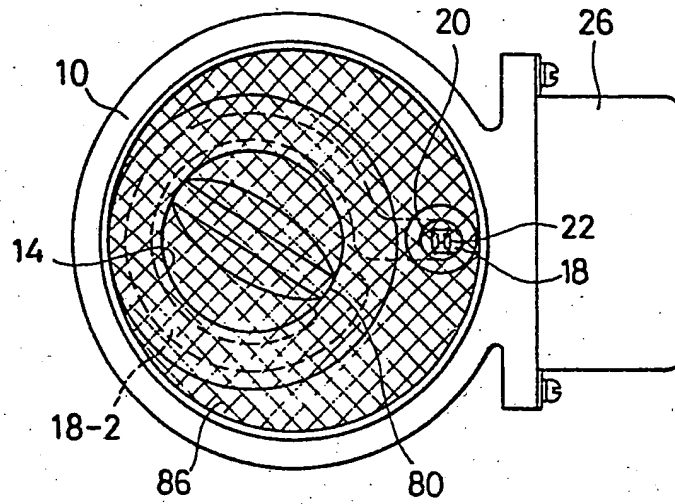


FIG. 21

